



UNITED STATES PATENT AND TRADEMARK OFFICE

K. H

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,616	07/24/2001	Vladimir Segal	30-5004 DIV3	6002
21567	7590	04/21/2004	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			MORILLO, JANELL COMBS	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

K.H

Office Action Summary	Application No.	Applicant(s)
	09/912,616	SEGAL ET AL.
	Examiner	Art Unit
	Janelle Combs-Morillo	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 January 2004.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 37-42 and 44-59 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 37-42 and 44-59 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892) 12/11/03 4) Interview Summary (PTO-413) Paper No(s). _____ .

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 12/18/03 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1/20/04 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 37-42, 44-59 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original specification does not mention the particular limitation of “non-iron based alloy”, and therefore said phrase is considered new matter. The instant specification does provide support for a preferred composition embodiment, wherein the target comprises “at least one of Al, Ti, Cu, Ta, Ni, Mo, Au, Ag, Pt and alloys thereof” (specification page 2 lines 6-7). However, the specification does not specify (explicitly or implicitly) that said target is a “non-iron based alloy”.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 38-42, 48-55, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunlop (US 5,780,755).

Dunlop teaches an aluminum alloy with a grain size of $< 20\mu\text{m}$ (column 4 line 19), in particular $< 2 \mu\text{m}$ (column 10 lines 12-13), wherein the precipitate regions present are $< 1 \mu\text{m}$ (column 4 lines 22-23). Dunlop teaches that randomly oriented grains (column 8 line 59) or other desired textures (including $<111>$, see Fig. 11) can be controlled by ECAE (column 8 lines 25-39). Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning independent claim 38, because Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6), then it is held that Dunlop teaches that the second-phase precipitates are likewise uniformly distributed. The degree of $<111>$ texture taught by Dunlop in Fig. 11 (which was the result of ECAE, see column 8 lines 60-67) qualifies as “strong texture”, substantially as presently claimed.

Concerning independent claim 39, Dunlop teaches a grain size of $\leq 2 \mu\text{m}$ (column 10 lines 12-13).

Because Dunlop teaches a product by process substantially as claimed in independent claims 38 and 39, including working by ECAE in multiple passes (column 8 lines 1-4) such that a desired texture (including $\{111\}$, as claimed in instant claim 38) can be formed by varying parameters of ECAE (column 8 lines 25-59), and because Dunlop teaches when said process is performed on an aluminum alloy a grain size is achieved that overlaps the presently claimed grain size range, it is held that Dunlop has created a *prima facie* case of obviousness of the presently claimed invention.

Concerning claims 41, 51, as stated above, Dunlop teaches two ECAE passes at column 8 line 1. Additionally the examiner points out that it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See MPEP 2113, *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524) *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Applicant has not shown that the presently claimed “at least 3 passes” (claim 41) results in a product materially different than the prior art product.

Concerning claims 42, 53-55, Dunlop does not teach the orientation distribution function (ODF) of the instant aluminum alloy. However, the examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as ODF) are necessarily present. See MPEP 2112.01.

Concerning claims 40, 52, 58-59, as stated above, Dunlop teaches an aluminum alloy composition, which meets the presently claimed composition limitation.

Concerning claims 48-50, Dunlop teaches that precipitate regions present $<1 \mu\text{m}$ (column 4 lines 22-23), which overlaps the presently claimed range.

5. Claims 37, 44-47, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunlop (US 5,780,755) in view of “Aluminum and Aluminum Alloys” pp 290-292.

As stated above, Dunlop teaches an aluminum alloy with a grain size of $<20\mu\text{m}$ (column 4 line 19), in particular $<2 \mu\text{m}$ (column 10 lines 12-13), wherein the precipitate regions present are $<1 \mu\text{m}$ (column 4 lines 22-23). Dunlop teaches that randomly oriented grains (column 8 line 59) or other desired textures (including $<111>$, see Fig. 11) can be controlled by ECAE (column 8 lines 25-39). Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning independent claim 37, Dunlop does not mention “the resulting alloy being precipitate free”. However, it is well known to perform a step of solution heat treating to obtain a homogeneous solid solution, followed by quenching in order to maintain the super saturated solution (see “Aluminum and Aluminum Alloys” p 290-292). It would have been obvious to one of ordinary skill in the art to achieve a precipitate free solid solution for the fine grained sputtering target of Dunlop because the presence or absence of precipitates is known to be dependent on solution heat treating, and because “Aluminum and Aluminum Alloys” teaches a more homogeneous structure can be produced (p 292, 3rd column, 1st full paragraph).

Concerning claims 44 and 57, as stated above, Dunlop teaches an aluminum alloy composition, which meets the presently claimed composition limitation.

Concerning claim 45, Dunlop does not teach the orientation distribution function (ODF) of the instant aluminum alloy. However, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as ODF) are necessarily present. See MPEP 2112.01.

Concerning claim 46, the grain size taught by Dunlop (as stated above) overlaps the presently claimed ranges.

Concerning claim 47, as stated above, Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning claim 56, as stated above, Dunlop teaches two ECAE passes at column 8 line 1. See also above discussion of product by process limitations. Applicant has not shown that the presently claimed “from 4 to 6 passes” (claim 56) results in a product materially different than the prior art product.

Response to Arguments/Amendments

6. In the response filed on January 26, 2004, applicant amended claims 37 and 39, canceled claim 43. In the response filed on December 11, 2003 applicant submitted various arguments traversing the rejections of record.

Applicant’s argument that the original disclosure supports “non-iron base material” limitation has not been found persuasive. Just because the disclosure gives an example of an aluminum alloy does not mean the disclosure is drawn to non-iron base alloys (nor does this mean the disclosure is drawn to non-Pb, non-Co, non-Y based alloys, etc.). Excluding Fe from

the alloys that the instant broad invention is drawn to is clearly new matter, and is not apparent from the original disclosure.

Applicant's argument that the present invention is allowable over the prior art of record because Dunlop does not teach precipitate free alloys has not been found persuasive, see the new rejection above.

Applicant's argument that the present invention is allowable over the prior art of record because Dunlop does not disclose an alloy product produced from a cast material has not been found persuasive. See above discussion of product by process claims.

Applicant's argument that the present invention is allowable over the prior art of record because Dunlop does not teach the instant precipitate size has not been found persuasive. Dunlop teaches the precipitate regions present are $<1 \mu\text{m}$ (column 4 lines 22-23), which is substantially close to the instant range of $<0.5 \mu\text{m}$, and overlaps the instant range.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R
ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Jcm
Jcm
April 15, 2004